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IS 2087 (1988): Square tins for general purpose [MTD 32: Metal Containers]

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SPECIFICATION FOR SQUARE TINS FOR GENERAL PURPOSES

(Third Revision)

1. Scope — This standard prescribes the requirements, and methods of sampling and tests for square tins for general purposes.

2. Terminology — For the purpose of this standard, the definitions given in IS : 1394-1984 'Glossary of terms relating to metal containers (*third revision*)' shall apply.

3. Classes — The square tins shall be of three classes, namely, A, B and C, depending on the side and end seam treatment as prescribed in Table 1.

TABLE 1 SEAM TREATMENT

Class of Tin	Treatment	
	End Seam	Side Seam
(1)	(2)	(3)
A	Soldered	Soldered/welded
B	Compound lined	Soldered/welded
C	Dry	Dry

4. Requirements

4.1 *Dimensions and Capacities* — The tins shall be manufactured to the dimensions and tolerances specified in Table 2 read with Fig. 1. The gross capacities of the tins shall be measured with water at ambient temperature, with closures fitted and shall be not less than those given in Table 2.

4.1.1 The recommended usage and quantity of products packed in various sizes and classes of tins are given in Appendix A.

4.2 *Material*

4.2.1 The body and ends of tins shall be made from tinplate, or blackplate of nominal thickness as specified in Table 2. The inside of blackplate containers shall be lacquered with a suitable non-toxic laquer.

4.2.1.1 The coating requirement for tinplate shall depend upon the product to be packed and shall be as specified by the purchasers.

4.2.2 The closure components shall be manufactured from 0·25 mm thick tinplate. Thinner tinplate may be used, if agreed to between the purchaser and the supplier.

4.2.3 When an over-tagger is required, it shall be made from 0·10 mm tinplate.

4.2.4 When an under-tagger is required, it shall be made from aluminium, tinplate or any other suitable material.

4.2 5 The minimum tin content of the solder shall be 2 percent for machine soldering and 40 percent for hand soldering.

4.3 *Manufacture*

4.3.1 Each component shall be made from a single piece of tinplate or alternative material as specified in 4.2.1.

Metal Containers Sectional Committee, MCPD 12; Collapsible Tubes and Aluminium Containers Subcommittee, MCPD 12 : 3 [Ref : Doc : MCPD 12 (0818)]

Adopted 16 September 1988

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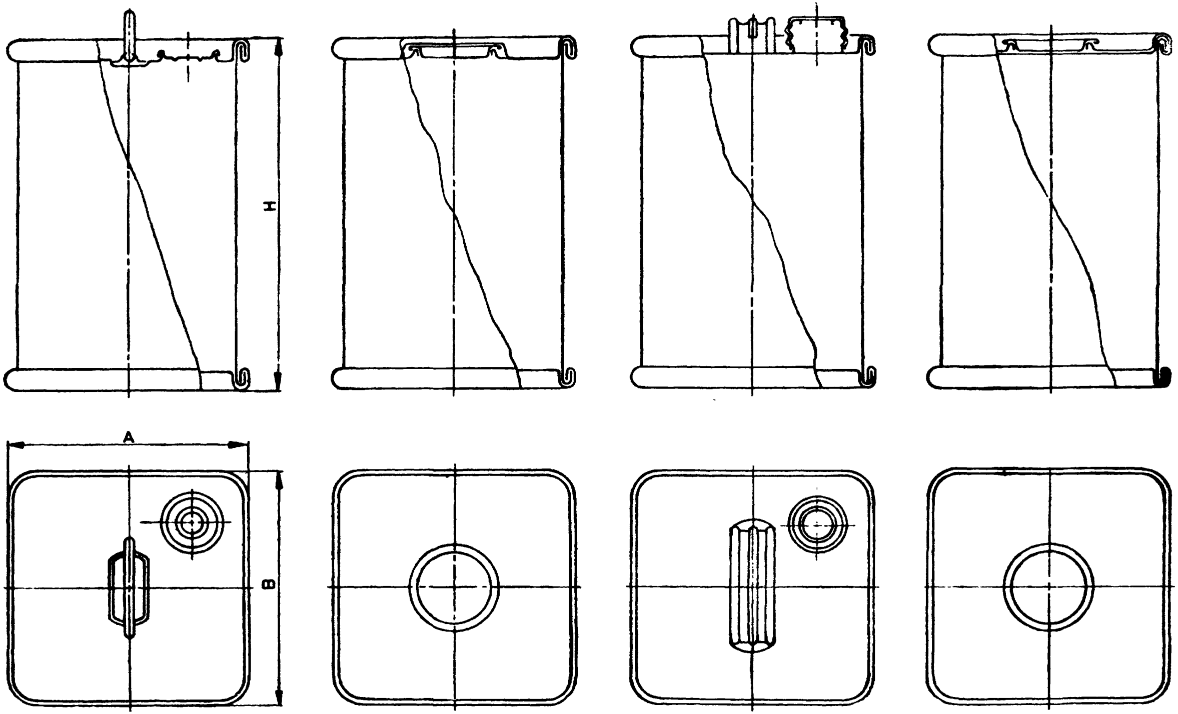


1A Capsule Ended Container with Handle

1B Over-Tagger and Lever Lid Container

1C Screw Neck Container with Handle

1D Under-Taggers and Lever Lid Container

FIG. 1 SQUARE TINS

AMENDMENT NO. 1 MAY 1999
TO
IS 2087 : 1988 SPECIFICATION FOR SQUARE TINS FOR GENERAL PURPOSES

(Third Revision)

(*Page* 4, *clause* 4.6) — Substitute the following for the existing clause:

'4.6 *Handle Pull Test for All Classes of Tins* — The handle of the tin, where provided, shall be capable of withstanding a gradually applied vertical force of the value given below for a period of two minutes:

For S_1 tins	400 N
For S_2 tins	300 N
For S_3 tins	200 N
For S_4, S_5, S_6, S_7 and S_8 tins	100 N'

(MTD 32)

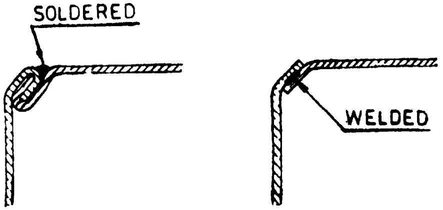
Reprography Unit, BIS, New Delhi, India

TABLE 2 CAPACITIES AND DIMENSIONS OF SQUARE TINS

(*Clauses* 4.1, 4.2.1, and *Fig.* 1)

Tin Ref No.	Dimensions *A* × *B*	Tolerance on Individual Base Dimension	Overall Height *H*	Tolerance on Height	Minimum Gross Capacity	Nominal Thickness of	
						Body	Ends
	mm	mm	mm	mm	ml	mm	mm
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
S_1	250 × 250	± 3	385	± 5	23 000	0·30	0·30
S_2	237 × 237	± 3	325	± 5	17 500	0·29	0·29
S_3	194 × 194	± 3	325	± 5	11 500	0·29	0 29
S_4	222 × 222	± 3	233	± 5	10 500	0·29	0·29
S_5	160 × 160	± 1	320	± 1·5	7 500	0·28	0·27
S_6	160 × 160	± 1	225	± 1·5	5 250	0·27	0·25
S_7	160 × 160	± 1	182	± 1·5	4 200	0·27	0·25
S_8	124 × 124	± 1	166	± 1·5	2 400	0·24	0·22

4.3.2 The side and end seams shall be formed as shown in Fig. 2 and 3.



2A Lock Seam (Soldered) 2B Lap Seam (Welded)

FIG. 2 SIDE SEAM DETAILS

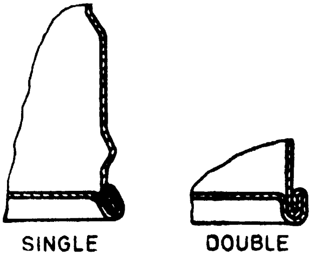


FIG. 3 END SEAM DETAILS

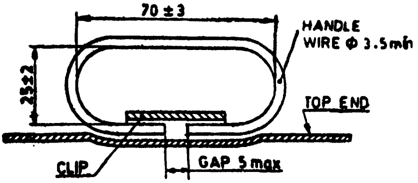
4.3.3 The side and end seam's treatment shall be as prescribed in Table 1.

4.3.4 When the tin is used for food packing, the lining compound shall be non-toxic.

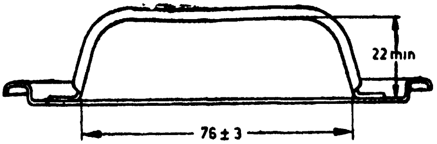
4.3.5 If so required by the purchaser, tins shall be fitted with a D-shaped wire handle or a tinplate strap handle as shown in Fig. 4 by soldering or projection welding.

4.3.6 Typical closures for general purposes are shown in Fig. 1. Recommended types of closures for packing various products are shown in Table 3. The selections shall, however, be as agreed to between the purchaser and the supplier.

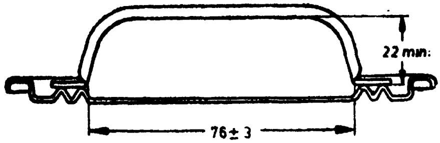
4.3.7 The tins shall be new and in clean condition, inside and outside, and shall be free from all traces of rust and foreign matter.



WIRE HANDLE



SOLDERED



WELDED

TINPLATE STRAP HANDLE

All dimensions in millimetres.

FIG. 4 WIRE AND STRAP HANDLES

TABLE 3 RECOMMENDED TYPES OF CLOSURES FOR SQUARE TINS

(*Clause* 4.3.6, and *Fig.* 1)

Tin Ref No. (1)	Used for (2)	Closure (3)
S_1, S_2, S_3, S_4	Medicinal powders, biscuits and confectionery items	130 mm dia lever lid
S_2, S_5	Cashew nuts, milk powder, confectionery items	Small lever lid with over-tagger or under-tagger
S_6, S_7, S_8	Liquid medical stores and other liquid items	Screwed neck and cap
	Solid powders or granules	Small lever lid

4.4 *Internal Finish* — The internal surface of the tin may be given a suitable protective coating, if so required by the purchaser.

4.5 *External Treatment* — The outside surface of the tin may be plain or given a protective and/or decorative coating, if so required by the purchaser.

4.6 *Handle Pull Test for All Classes of Tins* — The handle of the tin, where provided, shall be capable of withstanding a gradually applied vertical force of the value given below for a period of two minutes:

For S_1 tins	400 kN
For S_2 tins	300 kN
For S_3 tins	200 kN
For S_4, S_5, S_6, S_7 and S_8 tins	100 kN

4.7 *Test for Class A Tins Only*

4.7.1 *Air pressure test* — The tin (without its loose closure component) shall be capable of withstanding, without leakage, a minimum internal air pressure of 0·15 kgf/cm², under water for 15 seconds. The test shall be carried out as prescribed in **3** of IS : 2471-1963 'Methods of test for metal containers'.

4.7.2 *Hydraulic pressure test* — The tin, when tested by the method as prescribed in **4** of IS : 2471-1963, shall withstand gradually applied hydraulic pressure of 0·40 kgf/cm² for a period of not less than three minutes.

4.8 *Test for Class B Tins Only*

4.8.1 *Air pressure test* — The tin (without its loose closure component) shall be capable of withstanding, without leakage, a minimum internal air pressure of 0·08 kgf/cm², under water for 15 seconds. The test shall be carried out as prescribed in **3** of IS : 2471-1963.

4.9 *Test for Class C Tins Only* — These tins shall not be subjected to hydraulic and air pressure tests, but shall be generally powder-tight.

5. Marking

5.1 The manufacturer's name, initials or recognized trade-mark and year of manufacture may be clearly and indelibly marked or embossed on the tin, as required by the purchaser.

5.1.1 The tins may also be marked with the Standard Mark. Details available with the Bureau of Indian Standards.

6. Sampling

6.1 Representative samples for tests shall be drawn as prescribed in IS : 3259-1966 'Methods for sampling of metal containers'.

APPENDIX A

(*Clause* 4.1.1)

A-1. The recommended usage and quantity of product packed are shown in Table 4.

TABLE 4 RECOMMENDED USAGE AND QUALITY OF PRODUCT PACKED

Tin Ref No. (1)	Class of Tin (2)	Product (3)	To Pack (4)
S_1 S_2 S_3 S_4	B	Solid medicinal powders like sodium bicarbonate, milk powder, biscuits and confectionery items	20 litres or 20 kg 15 litres or 15 kg 10 litres or 10 kg 10 litres or 10 kg
S_5	B	Cashew nuts	10 kg
S_5	B, C	Confectionery	*See* A-1.2
S_6	A	Liquid medical stores like turpentine oil, glycerine and paraffin oil	5 litres or 5 kg
	B	Solid medical stores like alum, sodium bicarbonate, magnesium sulphate and boric acid	*See* A-1.2
S_7, S_8	B, C	Confectionery	*See* A-1.2

A-1.1 Class B tins shall be used for confectionery liable to be affected by the atmosphere and moisture and Class C tin shall be used for confectionery not likely to be affected by the atmosphere and moisture.

A-1.2 The quantity of confectionery packed shall depend upon the mode of packing and specific gravity of the material.

EXPLANATORY NOTE

This standard was first published in 1962 and was subsequently revised in 1966 and 1971. In this third revision, the tin sizes in Table 2 have been thoroughly revised to bring them in line with the stipulations of *Standards of Weights and Measures (Packaged Commodities) Rules, 1977* which stipulate the packaging of most of the products in 1, 2, 5 and thereafter multiple of 5 kg or litres as the case may be. The testing requirements have been revised to bring them in line with current manufacturing and testing practices.

Clauses **4.2.1.1**, **4.2.2**, **4.3.5**, **4.3.6** and **4.4** call for agreement between the purchaser and the supplier of these tins and permit the purchaser to use his option for selection to suit his packaging requirements.

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